MINOLTA XG-7

Similar models: Minolta XG-1
Minolta XG-9

Batteries: 2 S-76

Fig. 1 — top cover removed

Fig. 2 — bottom cover removed

Fig. 3 — shutter

Fig. 4 — mirror box

Fig. 5 — wiring pictorial

ADJUSTMENT LOCATIONS

Auto speeds	A
Meter readout	B
Manual (1/30)	C
Manual (1/1000)	D
Wind overtravel	E
Trigger switch (fast speed, auto and manual)	F
X-sync	G

ADJUSTMENT VALUES

Curtain travel time: 11ms (32mm distance)

Flange-focal distance: 43.7mm +0.02 — 0 (flange to pressure-plate rails)

Wind overtravel: Adjust for an even feel throughout wind-lever stroke. If the wind stroke feels hard at the end, the overtravel is excessive. If the shutter fails to latch or if the mirror fails to return, the overtravel is insufficient. After loosening the two screws holding the intermediate gear plate, Fig. 2, shift the intermediate gear out of engagement with the shutter gear to change the overtravel. Rotate the shutter gear clockwise to increase the overtravel, counterclockwise to decrease the overtravel. Use the eccentric as a fine adjustment.

ADJUSTMENT SEQUENCE

1. Curtain travel times. Remove the 6 screws holding the battery compartment. By lifting aside the battery compartment, you can reach the two tension-setting ratchets.
2. Auto speeds. Set EV 10, ASA 100, f/5.6, Auto. Adjust for 1/30 second.
3. Meter readout. Set EV 11, ASA 100, f/8, Auto. Adjust so that "30" LED turns on.
4. Manual 1/30.
5. Manual 1/1000.

DISASSEMBLY HIGHLIGHTS

Control positions: unimportant

Location of left-hand threads: screw holding transport cam at bottom of windshaft
shutter assembly

Sequence:

1. bottom cover and top cover (loose ball detent and compression spring under main switch)

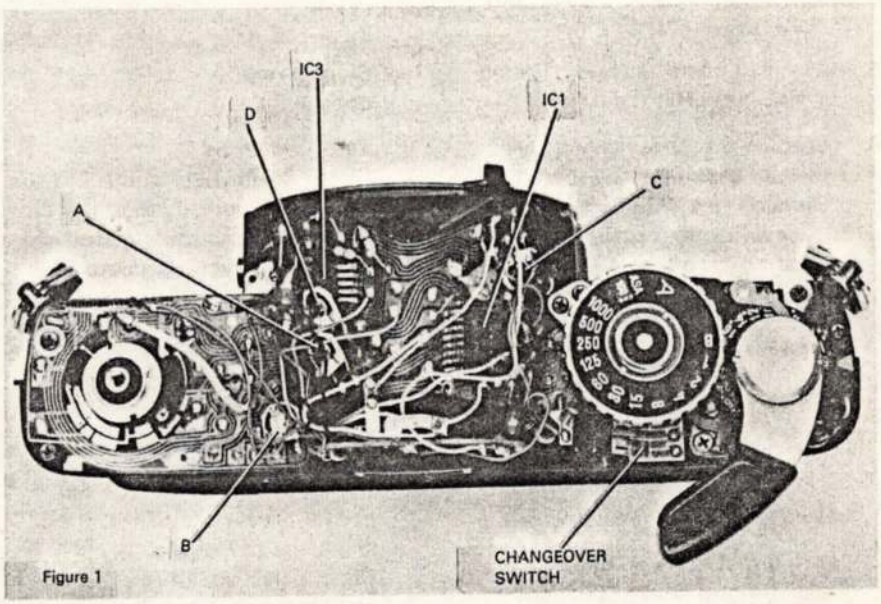

Figure 1

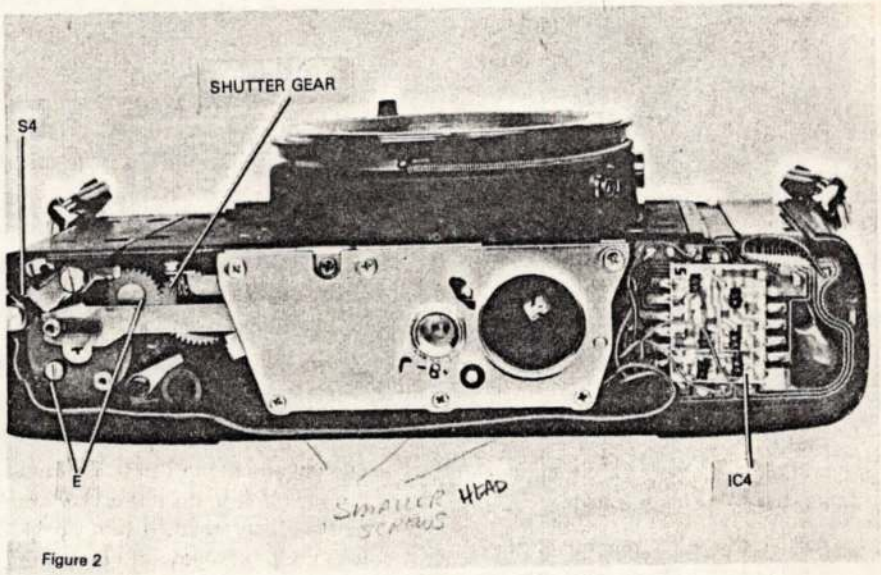

Figure 2

2. front-plate leatherette
3. front decorator plate (3 screws) at front of camera (a slit at the top of the front decorator plate allows you to spread the plate to clear the lens-mounting ring; lens-latch button will be loose)
4. unsolder wires marked with a check in Fig. 5
5. motor-drive coupler at bottom of wind shaft
6. 6 screws holding battery compartment
7. 2 circuit-board screws, rewind side at top
8. unscrew 3 screws holding speed-selector assembly (one screw also supports the auto latch which stays with the speed selector; another screw also holds the speed-selector detent — remove the detent screw that's closer to the front of the camera)
9. photocell circuit board, eyelens frame, and eyelens
10. 4 front-plate screws
11. front-plate/mirror-box assembly
12. spring that seats around bushing at bottom of shutter (one end of spring is now loose — this end connects against side of body casting)
13. screw and bushing holding mirror-release link at bottom of shutter assembly
14. 3 shutter-retaining screws at front of front plate
15. separate shutter from front-plate assembly

REASSEMBLY HIGHLIGHTS

1. Replace the shutter on the mirror box with the shutter in the cocked position and the mirror box in the released position.
2. Slide the front-plate/mirror-box assembly toward the wind-lever end of the camera before tightening the front-plate screws.
3. Adjust the wind overtravel after replacing the front-plate/mirror-box assembly.

TROUBLESHOOTING

Maximum battery drain:
Meter — 10ma
Shutter open — 30ma
Battery test — 35ma

Behavior without batteries: shutter will not release

Resistance of two CdS cells in parallel at EV 14 (photocell board held against light source): 310 ohms.

TROUBLESHOOTING FOR SPECIFIC PROBLEMS

1. Shutter will not release, LEDs operate.

   Reset switch S4.
   Check S4 for poor contact. You should measure 0V at the blue wire with the shutter released and 3V with the shutter cocked. No voltage at blue wire — reform and/or clean S4.

   Mirror-release combination magnet Mg2 and release capacitor C6.
   Shorting between the negative lead of C6 and pin 9 of IC4, Fig. 5, should release the mirror. If not, either the coil of Mg2 is open or C6 is defective. Check the Mg2 coil by measuring the resistance between the black ground wire and the brown wire at the bottom of the camera. You should measure around 12 ohms.

   Release switch S2.
   The voltage at pin 4 of IC4 should drop from 3V to 0V when you fully depress the release button. If not, clean and/or reform release switch S2 (under speed selector).

   IC3 or IC4.
   Shorting pin 8 of IC4 to ground should release the mirror. If not, IC4 is defective. If so, IC4 is good; IC3 may be the problem.

2. LEDs do not turn on when release button is depressed part way

   Metering switch S1.
   The voltage at pin 1 of IC4 should drop to 0V with the release button partially depressed. If not, check for poor contact of metering switch S1 (under speed selector).

   IC4
   Shorting pin 1 of IC4 to ground should turn on the LED display. If not, IC4 may be defective.

3. Shutter hangs open on auto, works properly on manual

   Changeover switch S8.
   At the brown wire to the top of the flex circuit, you should measure 3V at the auto setting and 0V at the manual settings. No voltage at auto — poor contact of changeover switch.

   CdS photocells.
   Check the CdS cells and the wiring to the photocell circuit board.

   Film-speed brush.
   Clean and/or reform the brush contacts of the film-speed brush in the speed selector.

4. Shutter hangs open on manual, works properly on manual

   Variable resistor C, Fig. 1, poor contact.

   Orange wire to variable resistor C, poor solder.

   Changeover switch, poor contact.

5. Shutter won't release at auto, overrange LED remains on

   Diaphragm resistor.
   At the yellow wire to the diaphragm resistor, Fig. 5, you should measure around 0.82V. The voltage should smoothly decrease to around 0.68V as you rotate the diaphragm-metering ring. If not, clean and/or reform brush at back of diaphragm-metering ring.

   Changeover switch.
   Check the yellow-wire connection. If you measure 0V at the yellow wire to the flex circuit, clean and/or reform the changeover switch.

   Variable resistor B, poor contact.

6. Shutter delivers bulb action at all settings

   Bulb switch.
   Check for poor contact of the bulb switch (under the speed-selector assembly). The bulb switch should open only at the bulb setting.

ALSO BAD IC1

7. Shutter hangs open at all settings

Trigger switch S3.
Check the trigger switch at the purple wire to the flex circuit, Fig. 5. You should measure direct continuity between the purple wire and ground when the shutter is cocked, no continuity when the shutter is released. Direct continuity when shutter is released — trigger switch, Fig. 3, is not opening.

Speed-selector brush.
Clean and/or reform the brush contacts under the speed selector.

8. Shutter delivers no exposure, all settings

Electromagnet Mg1.
At the red wire and at the brown wire to Mg1, Fig. 5, you should measure 3V. No voltage at brown wire — Mg1 has an open coil. Alternately, you can short the brown wire to ground. If the shutter then stays open, the coil of Mg1 is good.

Second-curtain latch.
The second-curtain latch may not be engaging the second curtain as a result of insufficient wind overtravel. Check by pulling aside speed selector.

9. No exposure manual and auto, bulb works

Variable resistor A, poor contact.

Variable resistor D, poor contact.

10. Shutter hangs open, LEDs will not turn on

IC4
Check for 3V at pin 12 of IC4 with the release button partially depressed. No voltage — check metering switch S1 and IC4 solder connections.

Functions of the ICs:

IC1 — amplifier for the metering system
charges the memory capacitor
switching system for the timing capacitor

IC2 — driver for the viewfinder LEDs

IC3 — provides release signal to IC4
oscillator for the self-timer LED
turns on LED for battery test

IC4 — provides the voltage to turn on the metering system
connects the electromagnet release system to the other circuits
provides the switching signal for the power winder

FREQUENTLY REPAIRED SECTIONS

a. First curtain lower tape slips off winding roller, usually jamming shutter-wind gears. To correct, remove front-plate/mirror-box assembly and tape guide at bottom of shutter

b. Mirror-lifting arm slips off mirror pin, Fig. 4. Later models use an E-ring to hold the mirror-lifting arm.

c. Diaphragm-metering ring, binding or sluggish movement. Check to see if the insulator for the diaphragm-resistor brush has come loose.

OTHER COMMENTS

a. You can get individual parts for both the shutter module and the flex circuit. Or you can purchase either as a complete assembly. A replacement flex circuit does not include the photocell circuit board and the speed-selector board.

b. Revised parts:

Mirror box has been modified to overcome problem of mirror cutting off part of aperture at slow speeds. Original — mirror box A.

Modified — box B. Mirror box B can be identified by black (rather than silver-colored) latch, Fig. 4 (part #5046).

Black ground wire from X-sync contacts has been eliminated in current models. In earlier models, the black X-sync wire connects beside the black Mg2 wire, Fig. 5. The ground wire for the X-sync contacts is not needed.

Green wire from diaphragm resistor in early models has been changed to a pink wire.

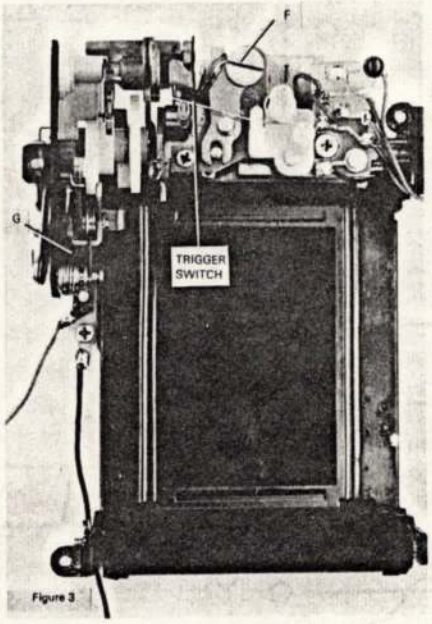

Figure 3

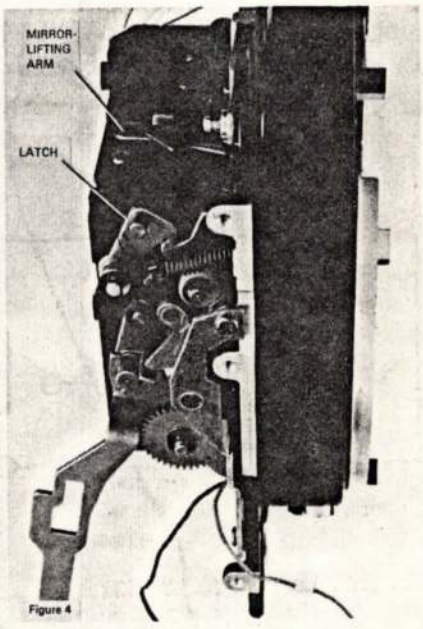

Figure 4

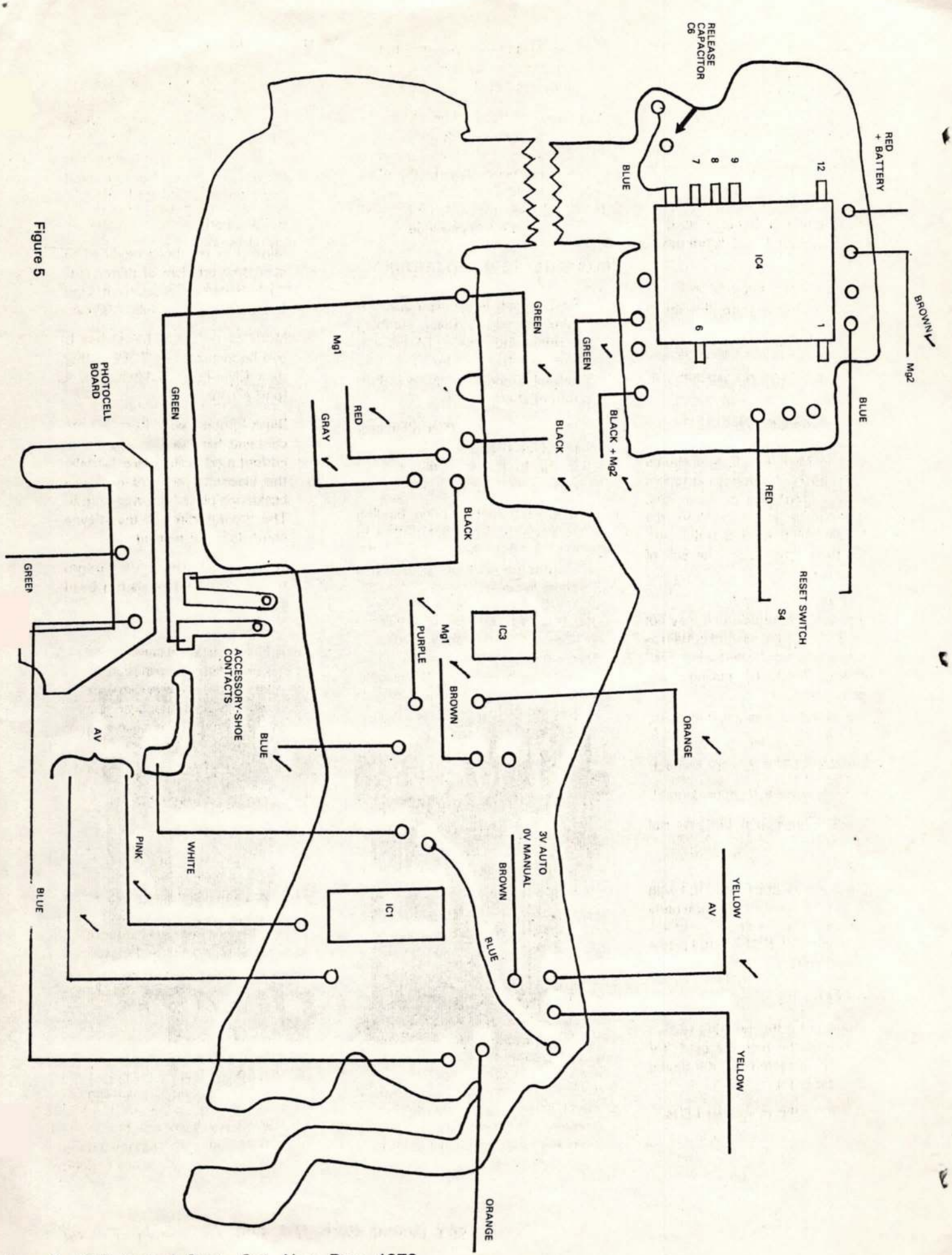
RELEASE CAPACITOR C8
RED + BATTERY
BROWN
Mg2
BLUE
IC4
12
9
8
7
1
6
BLUE
GREEN
GREEN
BLACK + Mg2
RED
RESET SWITCH S4
Mg1
GREEN
BLACK
RED
GRAY
BLACK
PHOTOCELL BOARD
GREEN
IC3
Mg1
PURPLE
BROWN
ORANGE
ACCESSORY-SHOE CONTACTS
BLUE
AV
3V AUTO
0V MANUAL
BROWN
BLUE
YELLOW
AV
PINK
WHITE
IC1
BLUE
YELLOW
ORANGE

Figure 5